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09/476,443	12/30/1999	RAJEEV K. NALAWADI	042390.P6349	7862

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EXAMINER

ORTIZ JR., BENJAMIN

ART UNIT PAPER NUMBER

2181

DATE MAILED: 09/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/476,443

Applicant(s)

NALAWADI, RAJEEV K.

Examiner

Benjamin Ortiz Jr.

Art Unit

2181

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____.  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1,5 and 15 rejected under 35 U.S.C. 102(b) as being anticipated by Young U.S Patent No. 5,619,706. Young discloses a method and system that includes the use of two different and separate interrupt controllers which receive two different interrupt requests that transfer initializing data and, when needed, re-routes an interrupt request from one controller to other interrupt controller in order for the second interrupt controller to service the first type of interrupt (column 7, claim 1). The system also includes a memory subsystem that stores information and instructions for the processors to manage interrupts in the system (column 4, line 45).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 2-4 and 6-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young U.S Patent No. 5,619,706 as applied to claims 1,5,15 above, in view of Tavallaei et al. U.S. Patent No. 5,987,538. Referring to claims 2,3,6,7,11 and 12 Young discloses a method and system that includes the use of two different and separate interrupt controllers which receive two different interrupt requests that transfer initializing data and, when needed, re-routes an interrupt request from one controller to other interrupt controller in order for the second interrupt controller to service the first type of interrupt but does not disclose configuring a system management interrupt (SMI) to recognize the initializing data of a first interrupt type. However, Tavallaei et al. teaches the use of programmable data entries, which provide information necessary to format an interrupt message or request (column 7, line 56). The entries are made up of vectors such as a vector field, a delivery mode field, destination field and a field for other purposes or otherwise reserved (column 8, 4<sup>th</sup> paragraph). Tavallaei also teaches the generation of interrupt messages such as a SMI (column 4, line 65). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Young's invention to include such programmable data entries in the interrupt requests transferred to the interrupt controllers in order to include initializing data in the fields of the entry such as configuration instructions for the controllers and for the generation of SMIs.

Referring to claims 4,8 and 13, Young further teaches a method and system that includes a first interrupt controller (circuit) which includes a programmable interrupt controller (PIC) and an advanced interrupt controller (APIC)(column 8, claim 8). It is well known that an 82C59 controller is a programmable interrupt controller and can be used in such a system.

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Referring to claims 9 and 10, Young further discloses a system comprising a plurality of processors, a memory subsystem and a bridge element (column 4, line 36). Young also states that the system may employ some or all of the components mentioned and also include different components than those illustrated (column 5, column 1). Tavallaei et al. teaches a system where a peripheral component, such as a memory device, is coupled to a second-type interrupt controller (column 9, line 61). Tavallaei also teaches coupling a first-type interrupt controller to a second-type interrupt controller (column 9, line 58). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to modify Young's invention to include such a peripheral component, such as a memory device, coupled to the second-type interrupt controller in order to store instructions to service first-type interrupt request and also to couple a first-type interrupt controller to a second-type interrupt controller in order to communicate interrupt messages between both controllers.

Referring to claim 14, Young further teaches an APIC that, upon detecting an interrupt request not exclusive to the PIC, re-routes the interrupt request to another APIC so that controller can service the interrupt request and not have two controllers issuing the same interrupt (column 5, lines 29-39 and last paragraph).

### ***Conclusion***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patents are cited to further show the state of the art with respect to programmable interrupt controllers, advanced interrupt controllers and interrupt management:

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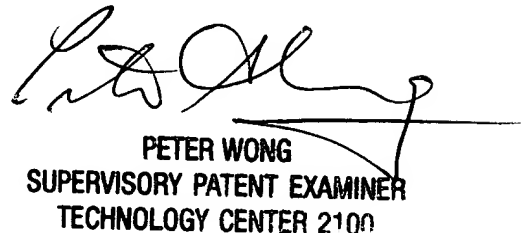
- a. U.S. Patent No. 5,481,725 to Jayakumar et al., which discloses a method for providing programmable interrupts for embedded hardware used with PICs.
- b. U.S. Patent No. 5,745,772 to Klein, which discloses an advanced programmable interrupt controller.
- c. U.S. Patent No. 5,848,279 to Wu et al., which discloses a mechanism for delivering interrupt messages.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin Ortiz Jr. whose telephone number is (703)305-3844. The examiner can normally be reached on Mon-Fri 8:00am-5:30pm, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Wong can be reached on (703)305-3477. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7239 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

bo  
September 4, 2002

  
PETER WONG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100